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THE CONDITIONS OF HUMAN PROGRESS.

BEFORE passing in succeeding essays to the relation of science to metaphysics in ethics, in æsthetics, and in history, it will be well to consider some of the conditions of human progress. Regarding as we do the whole range of social phenomena as susceptible of scientific explanation in terms of antecedence and sequence; regarding evolution as the key to this explanation; and regarding animal behaviour as affording some evidence of the embryological condition from which human conduct has been developed; we feel convinced that the foundations of any adequate study of social phenomena must be laid in biology; and that the lessons of organic life must be laid to heart by those who would apply the principle of evolution in the study of mankind. We shall first, therefore, discuss our problem in some of its aspects from the scientific standpoint, and then briefly indicate some of the metaphysical implications.

In the days before Evolution was on every one's lips, human faculty was regarded as a special endowment, variable no doubt, but subject to no definite law of increase within any given race or community. Unusual ability was indeed expected, and not infrequently found, in the sons of conspicuously able parents. But, broadly considered, the progress of civilised mankind was attributed rather to increased opportunities for the exercise of given moral and intellectual power than to any general and steady improvement in natural endowment. Human institutions, discoveries, inventions, art products, were seen to grow under the hands of successive generations, each of which contributed more or less to the social heritage of the community; human faculty was obviously

employed to better and better advantage as the social conditions improved from age to age; but of any progressive evolution of mother wit and innate ability our forefathers seem to have had no conception, or at any rate could produce no sufficient evidence.

But when the idea of organic evolution had gained ground and when the evolution of mental faculties came more and more prominently into view, the question inevitably arose whether human faculty was not also in process of development. Mr. Herbert Spencer strenuously contended that the increase of mental vigor acquired by parents is transmitted in some degree to their children, who thus start at a higher level of natural and inborn intellectual power than their progenitors. And if this occur in civilised mankind it follows that the average level of mother wit and innate mental force is higher in England to-day than it was in the reigns of the Plantagenets or the Tudors. Darwin's advocacy of natural selection as the main cause of organic progress led to its application in human affairs. And if natural selection be still operative among the individuals which constitute a civilised community, it follows that, by the survival of the better endowed intellectually and morally, the level of human faculty must steadily rise from generation to generation. Assuming therefore that the principles developed by Mr. Herbert Spencer and by Darwin are sound, and that they are applicable to human folk under the conditions of civilisation, it would seem that not only is there a steady progress in the opportunity under which mental faculty may be employed, but also an increase of the faculty itself which may be so exercised.

Neither Mr. Spencer's principle, however, nor the application of natural selection to civilised communities, pass unchallenged at the present time. We must therefore consider briefly the criticisms to which they may be subjected, and endeavor to formulate anew what appear to be the conditions of human progress. It will be convenient to deal first with natural selection.

The method of natural selection as it is commonly held to apply in the evolution of animals and plants is so well known as scarcely to need description. And yet there still linger popular misconceptions which are perhaps nowhere more obtrusive than in

the field of thought under consideration. Since competition and the struggle for existence are essential features in Darwin's conception, and since competition and struggle are sufficiently obvious among civilised mankind to-day, the conclusion, by no means necessarily true, is rashly accepted that natural selection is the inevitable outcome of this competition. But natural selection results from the death, or the exclusion from mating, of the unfit, leaving only the more fit to survive and mate. It is founded on three assumptions; first that, among those who are born some are by natural endowment fitter than others; secondly that there is competition; and thirdly that under this competition the less fit are ousted from the race, and the more fit alone remain to perpetuate their kind. Now there can be no question that the first two assumptions hold good in civilised races; some men are born with better natural faculties than others; there is a struggle for existence. But how about the third? Can we assert with the confidence of conviction, that those below par, morally and intellectually, are being weeded out, and that only those who are above par marry and have children? Can we even say that the children of those who are above par, steadily out-number the children of those who are below par? Nothing less than this will suffice to establish even the preliminary assumptions of natural selection. Such evidence as we have appears rather to support a contrary conclusion. In no important degree is there an elimination of human failures. Civilisation does all it can to assist and to protect them. A struggle for existence there is—and a hard enough struggle many find it. Competition there is—more than enough. But of elimination of the unfit, leaving only their moral and intellectual superiors to marry and have offspring, there is, it may be urged, not so much as to counteract the effects of the extravagant output of children among those below the mean level of mediocrity. Consider what the natural selection as a factor in progress means. It means that in any series of generations the offspring of those endowed with better mental faculties—those offspring which reach the age of effectual parenthood—outnumber the children of those who are less favorably endowed. Can any reasonable man believe that this is obvi-

ously true of human beings under the conditions of what we call civilisation? This is the question asked by those who criticise the application of natural selection among ourselves to-day. And they contend that, as an influence of any importance on human progress in civilised countries, natural selection is out of court.

What then can be urged on the other side of the question? It may be said that the microbe, the seeds of disease, and drink are still with us, and effect a certain amount of elimination. But, so far as mental endowment is concerned, it has to be shown that disease and drink remove a greater number of those who are below the level of intellectual mediocrity than above it. Granted for the sake of argument that, paradoxical as it may sound, disease is the condition under which, in spite of the doctors, a healthy race is evolved (and this is what the above argument practically comes to); is the more healthy race necessarily endowed with better mental faculties? Unless this can be shown to be the case the improvement of mother wit by disease remains unproven. Again it may be said that the scaffold and the prison tend to eliminate from the community our social failures. The criminal classes may, on this view be regarded as bunglers in knavery; too weak morally to resist temptation, too weak intellectually to escape detection. Granting, however, that there is here some amount of elimination, it can hardly be regarded as sufficient to bring about any material raising of the mean mental standard of civilised folk. There remains emigration which removes from Great Britain a small percentage of those who are commonly regarded as our failures. Whether the mean capacity of emigrants is decidedly lower than of those who are left behind is exceedingly difficult to decide. While many of the poorer classes who leave our islands are perhaps inferior to those who remain, there are not a few setting forth year by year to America and our colonies who are above par in energy, perseverance, and pluck. Granting, however, that there is through emigration some preponderant elimination of failures, does it amount to much? If it does, it must follow that the mean level of capacity in our colonies is by so much lower than the mean level of capacity in England—an assumption which is not likely to be acceptable in

Canada or Australia. On the whole therefore it is, to say the least of it, questionable, whether elimination by disease, by crime, and by emigration, taken together, outweigh the tendency of the sub-mediocrities to multiply more rapidly than the super-mediocrities. At any rate we may go so far as to say that there is at present no satisfactory and conclusive evidence that, by any process of elimination now in progress, or by any natural selection of the intellectual, the mean level of faculty is steadily rising.

No doubt there is a certain amount of what is termed by naturalists segregation. The more intellectual tend to congregate together and to intermarry; so to some extent do the less intellectual. Hence arises a system of intellectual grades. But when we are dealing with average intellectual capacity we have in view the mean of all grades. Segregation only affects the distribution of the material. If we have a box of shot of different sizes varying around a given mean, no change is effected by mere arrangement of the shot in a definitely graded series. Only if it be shown that the larger human shot multiply more rapidly than the smaller, will the mean size be raised. If the smaller shot multiply more rapidly the mean size will be diminished. In neither case need there be any elimination or selection; it is merely a question of relative fecundity. Only on the supposition that the rate of propagation on either side of the level of mean capacity is equal, will that level remain constant. It is a matter on which evidence is hard to obtain. But there do not seem good grounds for the hypothesis that the super-mediocrities are the more prolific.

Does sexual selection in civilised mankind tend to alter the level of mean capacity? A difficult and delicate question. It comes to this. Are confirmed bachelors and old maids mentally the inferiors of married folk? I dare not answer the question, having close friends in both camps. If matrimonial selection were based solely on mental endowment we should presumably be bound to reply in the affirmative. But good looks and annual income are disturbing factors, and one may at least feel doubtful whether brains are much on the increase through sexual selection.

Thus it would seem questionable whether the distinctively

Darwinian factors of evolution are efficacious in raising the standard of mental endowment in civilised communities. Among savage races and in early stages of the development of European peoples it may have had more efficacy.

Passing now to that kind of heredity on the importance of which Mr. Herbert Spencer insists, we find that the criticism is based on very different foundations. Natural selection is pretty generally admitted as a factor in organic evolution ; but, as is well known, the transmission from parent to child of individually-won increments of faculty, or more generally the inheritance of acquired characters, is denied by many of our leading biologists. In the one case it is questioned whether natural selection, efficacious as it is in the evolution of animals and plants, is operative in the case of civilised communities. In the other case it is denied that the inheritance of acquired increments of faculty or structure is anywhere admissible as effective in organic progress. It would seem, then, that this problem must first be solved on general biological grounds before we are justified in applying it in the field of human progress.

We may, however, fairly ask whether the facts of human progress are such as to necessitate the application of some such principle. Is there a progressive advance in mean mental capacity, inborn and hereditary, which demands some such explanation as Mr. Herbert Spencer's principle purports to supply? There are at any rate some writers and thinkers of authority and repute who doubt whether there is any such progressive advance. Buckle, writing in 1858, says, in his *History of Civilisation* (Vol. I., p. 178):

“Whatever, therefore, the moral and intellectual progress of men may be, it resolves itself not into the progress of natural capacity, but into a progress, if I may say so, of opportunity ; that is, an improvement in the circumstances under which that capacity after birth comes into play. Here then is the gist of the whole matter. The progress is one not of internal power but of external advantage.”

To much the same effect Mr. Lecky, in his *England in the Eighteenth Century* (Vol. I., p. 174), remarks: “How little evidence we have of any great difference in respect to innate ability between different nations or ages. The amount of realised talent in a community depends mainly on the circumstances in which it is placed,

and, above all, upon the disposition which animates it." Mr. Kidd, in his *Social Evolution*, in adopting a similar view, quotes Mr. Gladstone as having said in an interview with Mr. Stead :

"I sometimes say, that I do not see that progress in the development of brain power which we ought to expect. . . . Development, no doubt, is a slow process, but I do not see it at all. I do not think we are stronger but weaker than men of the Middle Ages. I would take it as low down as men of the sixteenth century. The men of the sixteenth century were strong men, stronger in brain power than our men."

Professor Huxley too spoke with no uncertain note when he said :

"In my belief the innate qualities, physical, intellectual, and moral, of our nation have remained substantially the same for the last four or five centuries. . . . There can be no doubt that vast changes have taken place in English civilisation since the reign of the Tudors. But I am not aware of a particle of evidence in favor of the conclusion that this evolutionary process has been accompanied by any modification of the physical, or the mental, character of the men who have been the subjects of it. I have not met with any grounds for suspecting that the average Englishmen of to-day are sensibly different from those that Shakespeare knew and drew. We look into his magic mirror of the Elizabethan age, and behold, nowise darkly, the presentment of ourselves."

All of this is in accord with the conclusions which Professor Weismann has of late years been urging on biological grounds and in which, as Professor Poulton has recently shown, he was anticipated by Dr. Prichard so long ago as 1826. No one has stated the essence of these modern views more clearly than Dr. Prichard did, seventy years ago, when he wrote : "Whatever changes of organisation are superinduced by external circumstances cease with the individual, and have no influence on the race." And no one has expressed their bearing on theories of human progress more clearly than Professor Ritchie when he said in his *Darwinism and Politics*. "Might we not define civilisation in general as the sum of the contrivances which enable human beings to advance independently of heredity?"

No doubt biologists are by no means agreed in the acceptance of these negative conclusions. Mr. Herbert Spencer himself remains unshaken in his original faith. No doubt popular opinion

is in favor of the transmission from parent to child of acquired increments of faculty. But for civilised mankind there are not sufficient statistics and of the right sort, to enable us to come to any independent decision. If we listen to a discussion of the matter we can scarcely fail to notice how the arguments on either side are founded on conjectures. A great mathematician is shown to be the son of parents trained in the mathematical schools. Who can deny, some exclaim, that the special training of the parents is transmitted to the gifted child? How else can we explain the fact that he is possessed of such rare ability in this particular sphere of mental endeavor? And since such cases are numerous and varied, have we not abundant evidence of the transmission of acquired aptitude? To which others will reply: What proof do you offer of the assertion that the aptitude transmitted was acquired and not innate? It is the combined inborn faculty of two gifted parents, not the superadded training, that is inherited. And since this innate mathematical power develops under the careful teaching of trained parents; since the child grows up in an intellectual atmosphere of the higher mathematics, no wonder he displays genius of this special kind, raised to its highest expression by assiduous care and guidance. And so forth. A discussion of this kind, where conjectures gaily masquerade as evidence, is interminable. Neither side is likely to convince the other, because neither has access to the particular facts, and neither has the smallest intention of abandoning its principles. As has before been said the problem must be solved by biologists. The weight of biological evidence at present is, in my opinion, sufficient to justify an interim verdict of "not proven." Our most profitable course, therefore, will be to assume for the sake of argument, that acquired increments of faculty are not inherited, and to inquire what are the conditions of human progress on the supposition that this assumption will eventually prove to be correct.

If it be true that the faculties which lie dormant in the infant over whose cradle the mother bends to-day are no better than those which were innate in the child four centuries ago, it is clear that social progress must lie in the increased facilities and better oppor-

tunities for putting this faculty to its most efficient use. We are in fact thrown back on to the pre-evolutionary position occupied by those who considered the question before Mr. Herbert Spencer and Charles Darwin laid their theses before the world. And it would at first sight seem that evolution ceases when civilised progress commences. Such a conclusion would however be altogether erroneous. The valid conclusion is that evolution has been transferred from the organism to his environment.

Let us turn for a moment to the organic world that we may discover the germs from which this new method of evolutionary progress has developed. And let us first ask what a presumably unconscious organism, such as a plant, inherits. In the first place it inherits, within certain limits, a well-defined form, structure, and habit or mode of growth. In the second place it inherits, in greater or less degree, a plasticity which enables it to accommodate itself to varying circumstances. The characters which fall under the first head are what are technically termed congenital; those which are evoked by the play of circumstance are technically termed acquired. Both the congenital definiteness and the amount of innate plasticity are subject to variation. And the method of progress is through the natural selection of favorable variations. Among the higher animals we find heredity playing a like part. But the plasticity has taken on a new and higher form. Conscious imitation and intelligence render possible a more varied and more complex accommodation to circumstances; and where the animals live in social communities we have the beginning of tradition; we have the possibility of social inheritance running parallel with organic heredity; we have the initial stages of a transference of evolution from the organism to the environment which it creates for itself.

Picture an animal possessed of that innate plasticity which sympathy, a tendency to imitation, and intelligence imply. Suppose such an animal born into a community of this kind. He sees around him the social life of his species. Through sympathy and imitation he is impelled to enter into and become an active participant in this life. His quick intelligence enables him to follow the moves of that life's game, and he throws himself into it with energy.

If above the average of his fellows he may see new moves and carry them into execution ; through imitation and sympathy others follow suit, and adopt his methods. The game is raised to a higher level. The better procedure becomes traditional in the species. The next generation are born into a community where life's game is played on an improved and more elaborate plan with better methods and to greater advantage. Even if endowed with no inherited increment of faculty the members of this generation are none the less heirs to a better heritage, that of the improved traditions of their race. Continuity and progress are thus rendered possible in a manner and by methods different from, though arising out of, those which are seen in the organic heredity that suffices for the plant and the pre-social animal. Imitation supplies the element of continuity ; intelligence, that of progress. All that organic heredity has to do is to maintain the standard of these two essential faculties. Intelligence will devise better moves in the hazardous game where life is at stake ; imitation will enable even mediocrity to profit by them ; and succeeding generations will be the gainers, leaving intelligence free to devise yet better methods of procedure.

Such an animal is man. In his civilised state organic evolution in the race, conditioned by natural selection, has been superseded by evolution of our social environment, rendered continuous by tradition. Between the lower animals in which organic evolution prevails, and the Anglo-Saxon race of to-day among whom the evolution is of the social type, lie many grades in which the two methods overlap. The transition has been gradual. But as man became more distinctively human, and as civilisation advanced, natural selection slowly but surely waned and the social type of progress slowly but surely waxed in range and importance.

The two pre-requisites in any process of continuous evolution are continuity and progress. What, we may inquire, is that which makes social evolution possible ? If we were to ask half a dozen leading men to reply to this question in a single word, each would perhaps give a different answer. But each answer would emphasise either the element of continuity or that of progress. Mr. Balfour's reply is : Authority.

"Suppose for a moment a community of which each member should deliberately set himself the task of throwing off so far as possible all prejudices due to education ; where each should consider it his duty critically to examine the grounds whereon rest every positive enactment and every moral precept which he has been accustomed to obey; to dissect all the great loyalties which make social life possible, and all the minor conventions which help to make it easy; and to weigh out with scrupulous precision the exact degree of assent which in each particular case the results of this process might seem to justify. To say that such a community, if it acted upon the opinions thus arrived at, would stand but a poor chance in the struggle for existence is to say far too little. It could never even begin to be ; and if by a miracle it was created it would without doubt immediately resolve itself into its constituent elements."

And in answer to another who should reply : Not Authority but Reason—he says :

"If we are to judge with equity between these rival claimants, we must not forget that it is Authority rather than Reason to which, in the main, we owe, not religion only, but ethics and politics ; that it is Authority which supplies us with essential elements in the premises of science ; that it is Authority rather than Reason which lays deep the foundations of social life ; that it is Authority rather than Reason which cements its superstructure. And though it may seem to savor of paradox, it is yet no exaggeration to say, that if we would find the quality in which we most notably excel the brute creation, we should look for it, not so much in our faculty of convincing and being convinced by the exercise of reasoning, as in our capacity for influencing and being influenced through the action of Authority."

Now what is this authority but the articulate voice of tradition? Is it not the condensed expression of all that is most valuable in social inheritance? May we not fairly regard the influence of authority as that which gives continuity to the thought and feeling of civilised mankind? May we not say that it represents the accumulated experience of our race? Authority links us with the past. So far we may agree with Mr. Balfour. But in authority, though we may see in it the bond of continuity, we do not find the promise of progress. The authority of to-day is not, and should not be, the authority of yesterday. If it were, social evolution would be impossible. While authority is the bond of continuity, reason is the mother of progress. Under the influence of authority man enters into his social heritage, and falls heir to the achievements of his race. Is he to rest content with transmitting this heri-

tage unimpaired? No. Much of it indeed he must leave unmodified—for life is short and the inheritance of vast extent. But he chooses out some larger or smaller plot of ground in the great estate and says: "Here will I dig, and sow, and reap. This corner of the estate shall be the better because I have lived and worked therein." In other words, selecting his field of labor, he critically tests, modifies, and, if it may be, enriches the heritage which shall pass to succeeding generations. He not only hands on authority but he becomes *an* authority—one who makes history. This is the office of reason. Of course it is only the gifted few who leave their impress on social existence—who are in the highest sense teachers of mankind. But though teachers be few their pupils may be many. Have we not all learnt from Shakspeare and Newton? Has not Darwin made the authority of to-day different from that of 1858? Every discovery, every art-product, every invention; our philosophy, our science, our music, painting, sculpture, literature; our museums, art galleries, theatres; our steamships and monster manufacturing; our intellectual, moral, and æsthetic environment; what are all these but the embodiment of the ideals which our forefathers or contemporaries have striven successfully to realise, and have impressed on the heritage of the race? They remain to give continuity to social evolution; they form the social structure which future generations will progressively modify to higher ends. This is our social heritage; this we must strive to better ere we die.

Thus although the average of human faculty may stand at no higher level—may even stand at a lower level—than it did in the days of the Tudors, social evolution still continues, and will still continue so long as that faculty is employed in building up the structure of civilised society. Each generation of builders is working at a higher level and with the better tools their predecessors have devised. The building thus fashioned is the social environment; and the essential characteristic of social progress is that evolution has been transferred from the organism to his environment. This environing social structure it is which persists. It is the product, not of the average intelligence, but of the best thought and endeavor of each succeeding age. But it forms the mould in

which mediocrity is cast. The average intelligence profits by all that human excellence achieves. And though it be true that the level of average faculty is no higher now than it was in Tudor times, yet the level of average acquisition is decidedly higher. If it be not so, then is our education futile. The same average faculty is employed to greater advantage. Four centuries of human progress have given increased facilities for putting this faculty to its most efficient use. Evolutionists have been too ready to take it for granted that the human intellect is still evolving to higher grades of perfection. For this belief there is no sufficient evidence. Not the intellect, but what it achieves has been and is being evolved. If the mediocrities of to-day are richer, intellectually and morally, than the mediocrities of Shakspeare's day, it is not through increased hereditary power of intellect or of will, but from the better opportunities rendered possible by social inheritance. They are not themselves more nobly endowed, but they are heirs to a more highly evolved social environment ; they are not themselves inherently brighter, but they reflect the brightness of a more luminous social sky.

If these conclusions be based on sound reasoning, and the assumptions on which they are founded be justified by the facts, we must regard social evolution as proceeding by a method different from that which obtains in the organic nature with which the biologist has to deal. It is a superorganic evolution. But there will probably be some, perhaps many, who will cling tenaciously to older views of the range and importance of heredity. The teacher will protest that we are robbing his office of more than half its value. Our labors are largely wasted, he will complain, if they are restricted to the boys and girls before us, and are doing nothing to raise the level of faculty in the race. But there is comfort in the reflexion that his errors are also limited in their range of influence. We are training a race of examinees ; and it is refreshing to think that we are not necessarily cramping the hereditary soul of man. Greater still is the solace we may find in the reflexion that the squalor and vice of our city slums is to a large degree the product

rather of a wretched and distorting environment, than of a debased and vicious hereditary nature.

Huxley said :

“ In a large proportion of cases crime and pauperism have nothing to do with heredity ; but are the consequence, partly of circumstances, and, partly, of the possession of qualities, which, under different conditions of life, might have excited esteem and admiration.”

There is surely hope in the belief, that, in the slums, we see rather the misapplication or the thwarting of the wholesome tendencies which man as man inherits, than the hot-bed of innate iniquity and the spawning ground of hereditary vice. Not that in-born tendencies to evil can be denied or should be overlooked ; not that a segregation of the vicious (to borrow a phrase from biological science) does not occur among the outcasts of civilisation. These are facts to be faced. And terribly stubborn facts they are. It is scarcely too much to say that organic heredity is beyond the power of man to alter or to modify. But we may place the child in circumstances which shall afford full scope for the development of all his better innate tendencies and shall thwart to the utmost the maturing of his proclivities to evil. Fortunately man inherits a plasticity, a power of accommodation to circumstances, which makes him the most mouldable of organic products. Fortunately he is “ the most consummate of all mimics . . . and there is no such another emotional chameleon.” He will take his color from the purer tints of more bright and healthy surroundings. Education, which is (or should be) the art of applying the suitable environment to the growing child at the successive stages of his development, will do much. And we must steadily continue our endeavors to over-master the bestial tendencies bequeathed to man by his brute ancestry, applying to the utmost the well-directed pressure and influence of all that is best and most civilising in the social inheritance which is the legacy of the founders of our common humanity.

Those who find it difficult or distasteful to accept the conclusion that there is no hereditary increment of moral and intellectual power may urge that the mental equipment of the average man to-

day is demonstrably better than that of his predecessors. But everything here depends on what is to be understood by mental equipment. The question is whether he is better equipped by nature or by art. Has he stronger mother wit, or is he better educated? It has been my good fortune to meet not a few artizans whose natural equipment has filled me with admiration. And I have said to myself: "If only these good fellows had enjoyed the opportunity of intellectual development under the guiding touch of all that is best in our social heritage of thought, science, and art, they would have been makers of history in some department of human endeavor. Their natural equipment is splendid; their equipment through the art of education of the rudest and most elementary kind. On the other hand, which of us has not met men of only average natural ability, who have had a training so careful and well-directed, that they have been able to cut a better figure in the world than thousands whose hereditary outfit was richer in promise? It is the natural equipment of the average man that, in Huxley's opinion, is no better now than it was in the days of the Tudors. The richer and more extensive stock in trade of the nineteenth-century city clerk has been gleaned from the stores which have accumulated during four centuries of social inheritance. It is this heritage, not his natural organic heritage, that has increased through the accumulation of intellectual wealth. And if we turn from the average to the exceptional, can it be maintained that there is a higher percentage of men of commanding genius in the decade now drawing to its close than there was during the last decade of the fifteenth century?

Again it may be said that Huxley's assertion that vice is in a large degree due to circumstance and nurture comes perilously near to a denial of the demonstrable efficacy of heredity in the transmission of moral and intellectual idiosyncrasies. But Huxley was lacking neither in common sense nor in practical powers of observation. He would have been by no means the last to proclaim that hereditary tendencies moral and intellectual, good and bad, are undeniable and unquestionable. These tendencies we must accept; for they are, in the existing social system, unalterable by human ingenuity. All that we can do is to prevent, in some degree, the

evil tendencies from realising themselves in act and deed. That upon which our argument is based is not a denial of heredity in man, which would indeed be absurd, but the assumption that human progress is the expression rather of the social inheritance of human achievement than of the progressive improvement of that which is given in organic heredity. And it is claimed that this social inheritance has a wider influence than merely organic heritage. Let us grant that Darwin was an example of hereditary genius. How does the rising generation profit thereby? His gifted sons do indeed inherit no mean share of his great powers. But the whole civilised world profits by his thought. It has enriched the intellectual and moral atmosphere we breathe. It has become part of our social inheritance.

Once more it may be urged that since mankind form the social environment of man, in saying that evolution is transferred from the individual to his environment we are only asserting, in somewhat pedantic phraseology, that the transference is from man to mankind. But our contention is that not mankind but the achievements of mankind form our social environment. Literature, art, philosophy, science, industrial inventions ; these are not mankind but its products. These form the atmosphere we breathe. And the analogy may serve to make clearer the essential nature of the transference. It is assumed that the lungs of the mind are no better than they have been for generations, but that the air they take in is richer in moral and intellectual oxygen. If the city clerk to-day has more mental vigor than he who occupied the stool a few generations ago, it is not because he has better lung-power but because more of this oxygen courses through his blood. It is not the lung-capacity but the atmosphere that is being evolved. But since a richer atmosphere brings more vitality, the intellectual vigor of the average man is heightened through the purer and richer air which is his through the social heritage of a more highly evolved environment.

The conclusions which we reach must be stated in frankly hypothetical form, since they are founded on assumptions, which cannot at present be established by adequate statistical evidence.

If, however, we are right in assuming that natural selection plays but an insignificant part in the development of man under the conditions of civilisation; and if we are right in assuming that the biological evidence for the inheritance of acquired increment of faculty is insufficient; it follows that, unless we assume some mysterious and unexplained inherent developmental tendency, the conditions of human progress must be sought in the evolution of the environment of human achievement, and in the influence of this environment on the individual during his period of greater plasticity. One important feature which distinguishes social evolution from the merely organic evolution which we see among the lower animals is the predominant part which is played by the fittest in raising the level of the less fit. This is brought to bear in two ways; first by bettering the environment, and secondly by bringing every individual in the community within its moulding influence; in short by original work in art, science, and industry, and by education. These are the only conditions under which, so far as we know, social progress is possible. And if, as seems probable, the nature of civilised man is undergoing no improvement, it is assuredly all the more necessary that we should do our utmost to improve his nurture.

Such are some of the conclusions we reach when we apply the principles of evolution under the conditions which obtain in the progress of civilisation. But, after all, supposing our analysis to be adequate and our synthesis duly proportioned, have we done more than indicate the nature of the process in terms of related antecedence and sequence? Does not much remain behind unexplained, and indeed inexplicable by science? If even the fall of a stone to the earth, the formation of a chemical compound, the building of a snowflake, present problems which, after they have been submitted to the solvent action of scientific interpretation, leave insoluble metaphysical residues; if the vital processes of the *amœba*, the subtle changes in the nuclear-skein of the living cell, the development of a fertilised ovum, involve the play of forces which science must either ignore or accept as data from metaphysics; shall we say that the growth of human ideals—those ideals

without which a rational civilisation is inconceivable—melt in the explanations of science and leave no residues to be dealt with by metaphysics? I endeavored to show in my last essay that psychology in its strictly scientific aspect has no concern with the Will, while for metaphysics the Will is the very heart, soul, and essence of mental development, the underlying cause of the sequences which the psychologist patiently studies with a view to the elucidation of the conditions under which they occur. But if civilisation has any metaphysical meaning it is as the embodiment and manifestation of the corporate will. The spirit of the age is for the metaphysician something more than a mere form of words. It is not fashioned by us; but operates in us and through us. It is of us, its children; we are of it, our parent. It includes us, and without us it is incomplete. It is part of the metaphysical basis of our religious conception of God; and through it God is made manifest in man. But with it alone this conception is partial and incomplete. Not only the Force which makes civilisation possible but that which makes all things possible, which affords the data of all scientific inquiry, is the ultimate synthesis of metaphysical thought. It is the underlying Reason which makes any explanation rational. The man of science, as such, can afford to ignore it; he may well be content to accept things as they are, to note the succession of events and express them in splendid generalisations. But the poet cannot thus rest content; and Wordsworth's invocation touches, with some poetic license, a chord which is nowise inharmonious with the music of Newton or of Darwin.

“Wisdom and Spirit of the Universe!
 Thou Soul that art the eternity of thought,
 That givest to forms and images a breath
 And everlasting motion, not in vain
 By day or star-light thus from my first dawn
 Of childhood didst thou intertwine for me
 The passions that build up our human soul;
 Not with the mean and vulgar works of man,
 But with high objects, with enduring things—
 With life and nature—purifying thus
 The elements of feeling and of thought,

And sanctifying, by such discipline,
Both pain and fear, until we recognise
A grandeur in the beating of the heart.
Nor was this fellowship vouchsafed to me
With stinted kindness. In November days
When vapors rolling down the valley made
A lonely scene more lonesome, among woods,
At noon and 'mid the calm of summer night,
When, by the margin of the trembling lake,
Beneath the hills homeward I went
In solitude, such intercourse was mine :
Mine was it in the fields both day and night,
And by the waters, all the summer long."

C. LLOYD MORGAN.

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